Service Center GPS

USDA

Goals & Purposes of GPS Core

- Learn the layout of the Map76
- Adjust unit settings
- Configure the unit to use differential correction
- Upload a background map
- Collect GPS data

USDA

Layout and Setup of the Garmin Map76

USDA

Layout and Button Functions of the Garmin GPSMap76

USDA

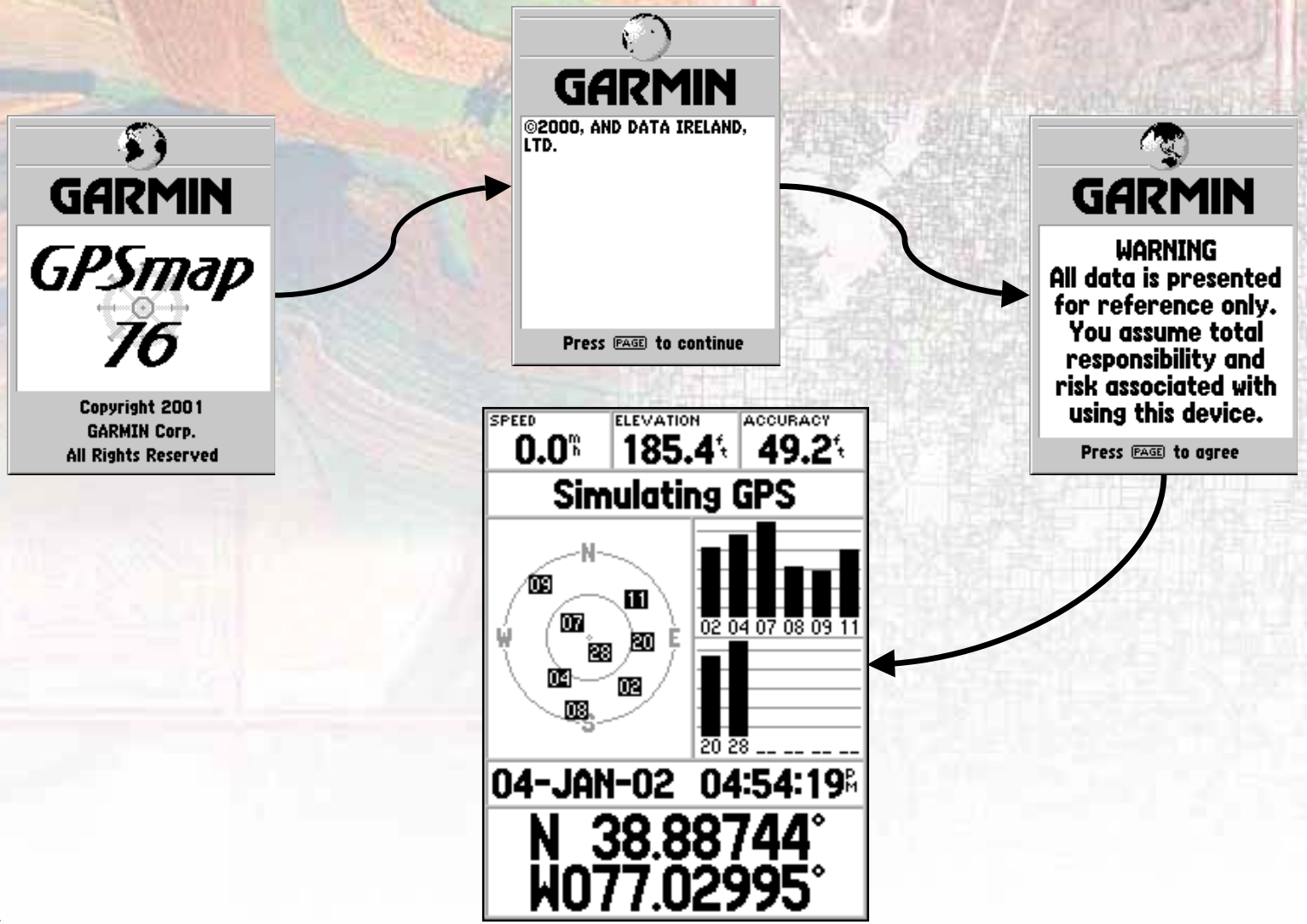
Back of the unit

Antenna Cable Port

Battery Compartment

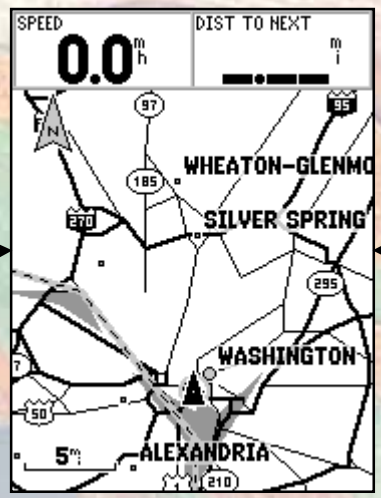
Power/Data Port

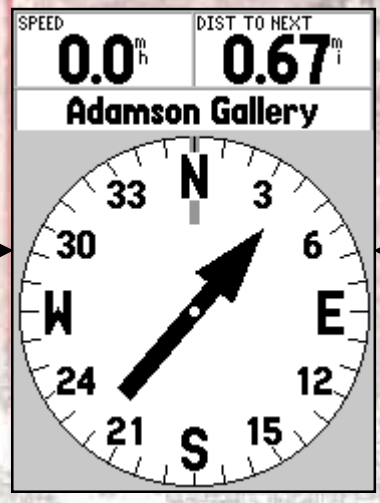
Turning on the Map76

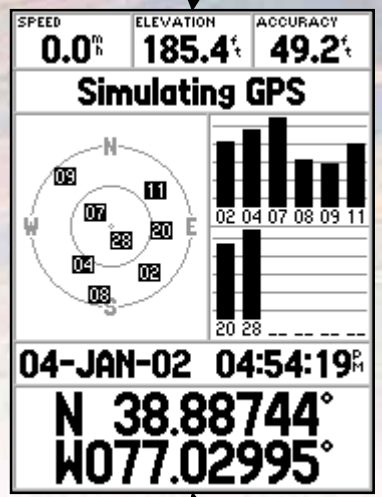


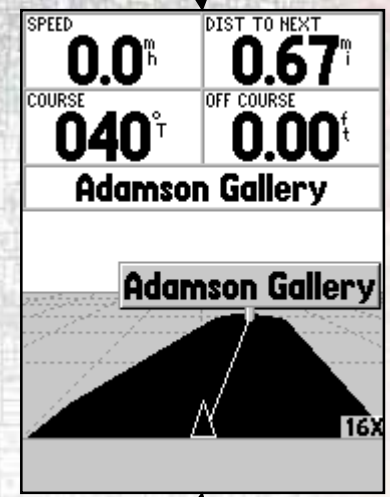
Setting the Map76 to Simulator Mode

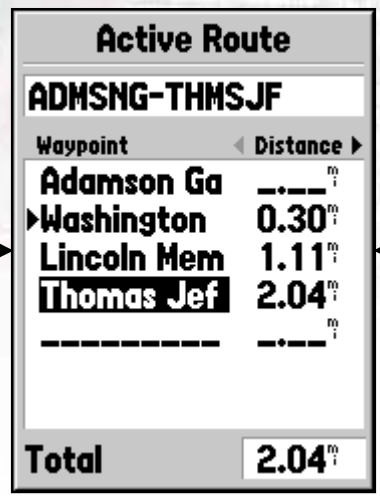
- Press the **Menu** key once with the **GPS Information** page open.
- Use the **Rocker** key to highlight the "Start Simulator" option from the list.
- Press the **Enter** key to accept the choice
- Exit the simulator mode by repeating this procedure and choosing the "Stop Simulator"option.





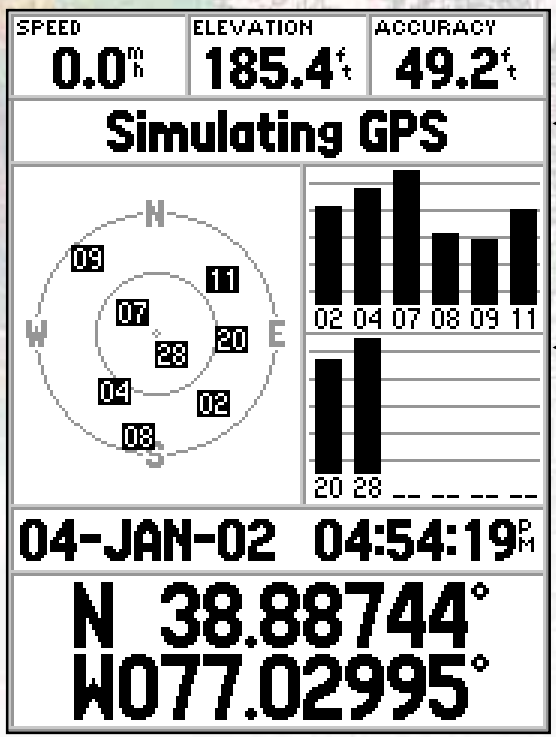






Pages on the Map76

GPS Information Page



Receiver Status Message

Sky Map

Satellite Strength Indicator Bars

Position

GPS Information Page Messages

- Autolocate – Directs the receiver to individually locate each satellite
- Acquiring Satellites – Receiver is looking for satellites and will display this message until it acquires at least three
- 2D GPS Location – The receiver is using only 3 satellites and can only calculate horizontal position
- 3D GPS Location – The receiver is using at least 4 satellites and can calculate altitude as well as horizontal position
- 2D Differential Location – The receiver is using 3 satellites and a form of differential correction to calculate horizontal position only
- 3D Differential Location – The receiver is using at least 4 satellites and a form of differential correction to calculate horizontal position and altitude

GPS Information Page Messages

- Lost Satellite Reception – The receiver is not able to receive satellite signals
- Simulating GPS – The unit is running in simulation mode and the actual GPS receiver is turned off

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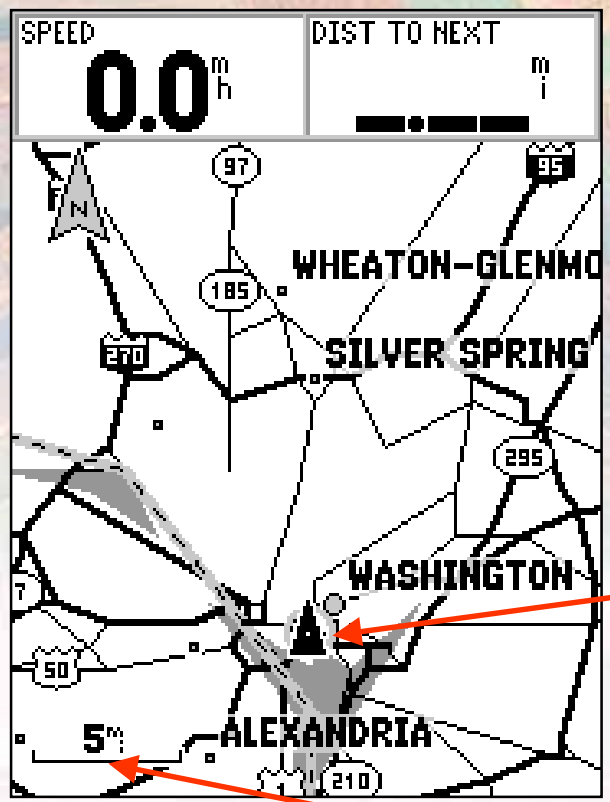
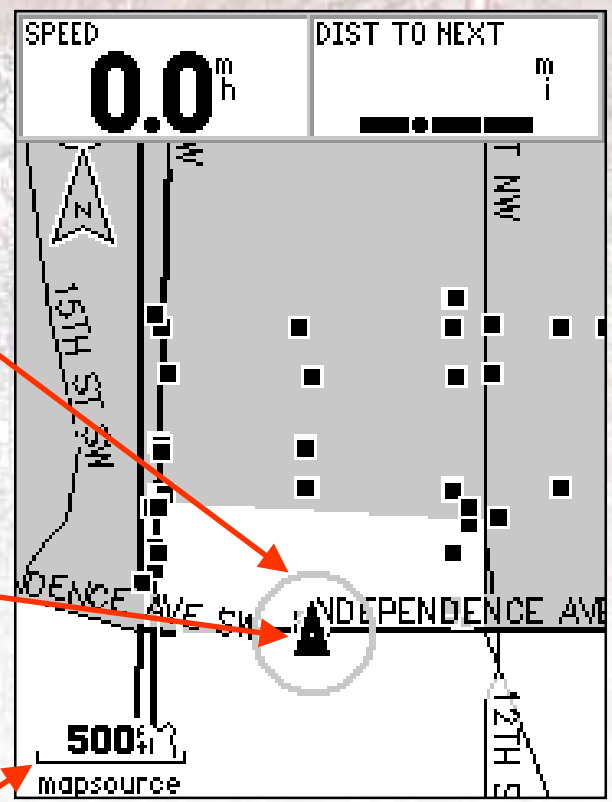
Map Page



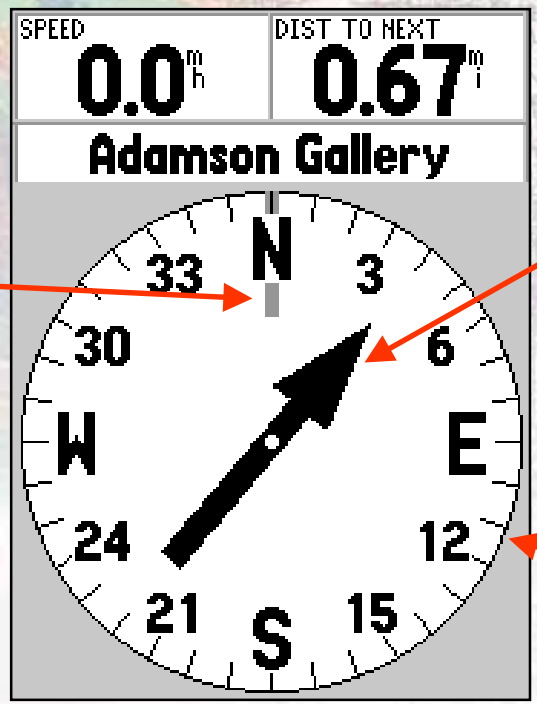
Predicted Error Bounds

User Position

Scale Bar



Pointer Page

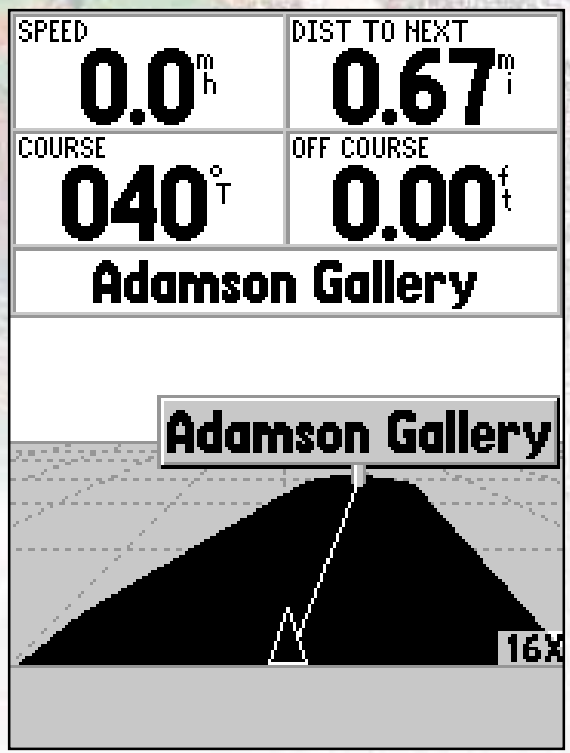


Vertical Bar

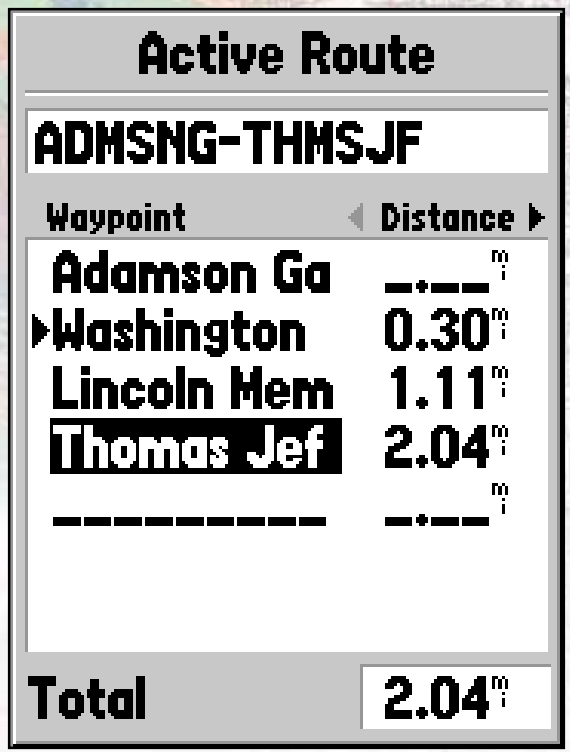
Pointer

Compass Ring

Highway Page



Active Route



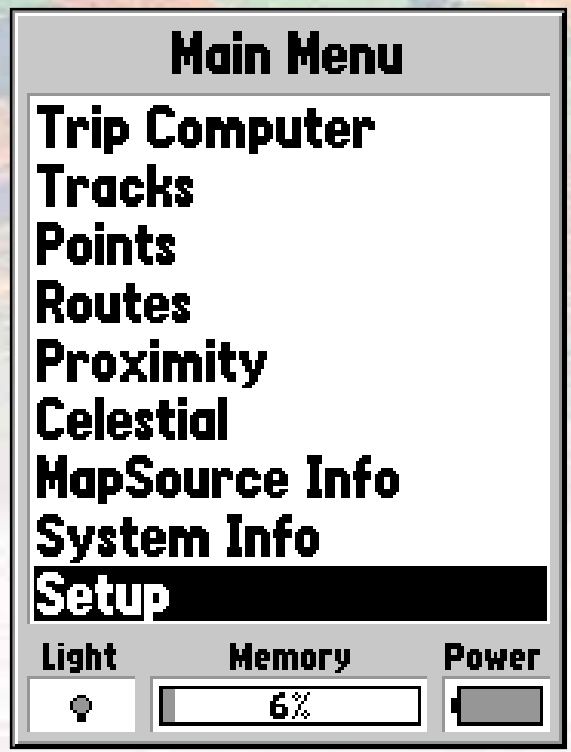
Topics Covered in this section

- Physical Layout of GPS
- Button Functions
- Powering up the Map76
- Simulator Mode
- Main Pages of the Map76

Adjusting Unit Settings

USDA

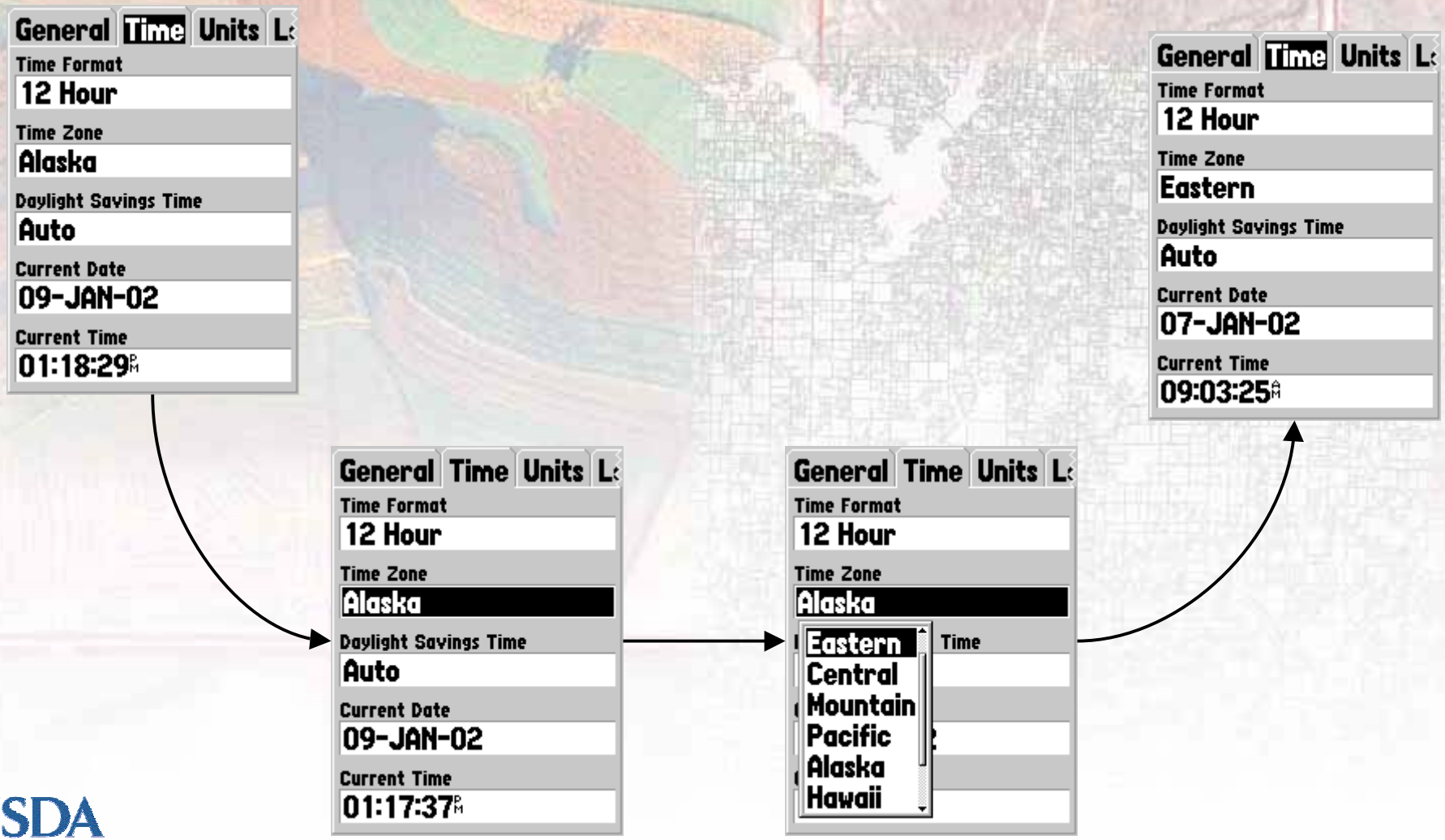
Rocker Key and Main Menu



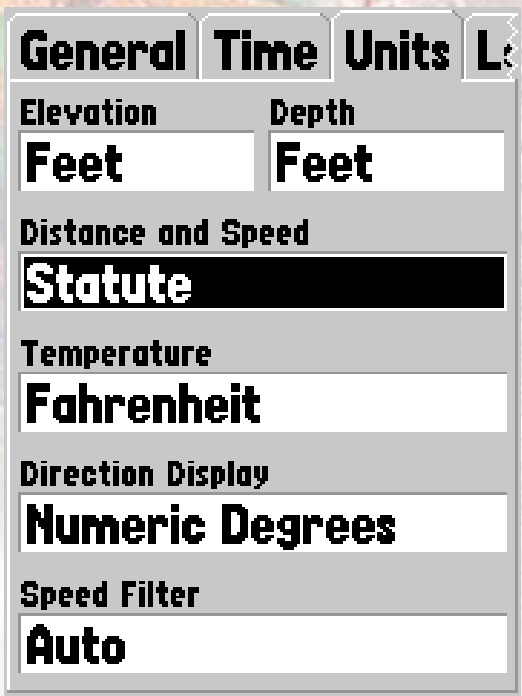
All of the following unit settings are accessed from the Setup Page:

Time Setup
Unit Setup
Location Setup
Interface Setup
General Setup
Alarm Setup

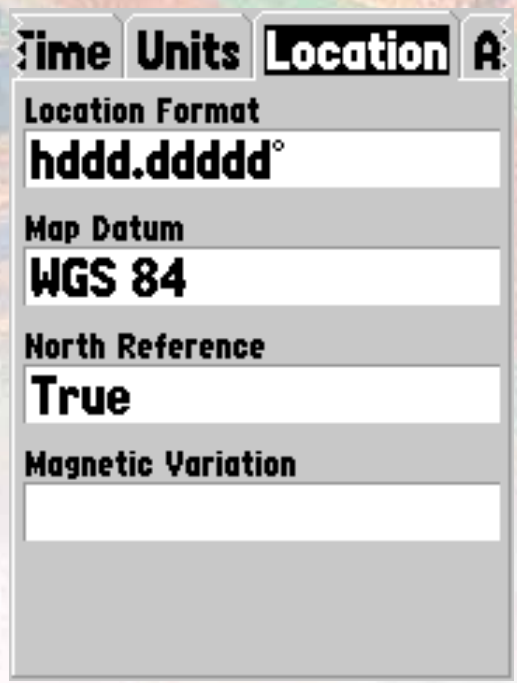
Time Setup

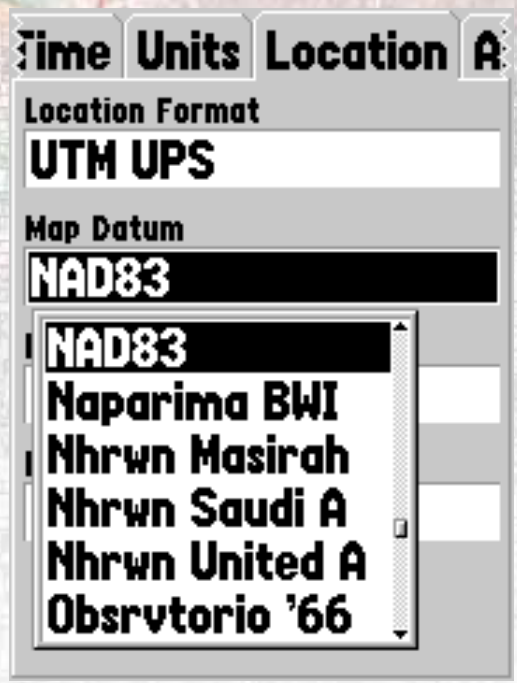

General
Time
Units
Time Format
12 Hour
Time Zone
Alaska
Daylight Savings Time
Auto
Current Date
09-JAN-02
Current Time
01:18:29 PM
General
Time
Units
Time Format
12 Hour
Time Zone
Alaska
Daylight Savings Time
Auto
Current Date
09-JAN-02
Current Time
01:17:37 PM
General
Time
Units
Time Format
12 Hour
Time Zone
Alaska
Eastern
Central
Mountain
Pacific
Alaska
Hawaii
Time
General
Time
Units
Time Format
12 Hour
Time Zone
Eastern
Daylight Savings Time
Auto
Current Date
07-JAN-02
Current Time
09:03:25 AM

Unit Setup

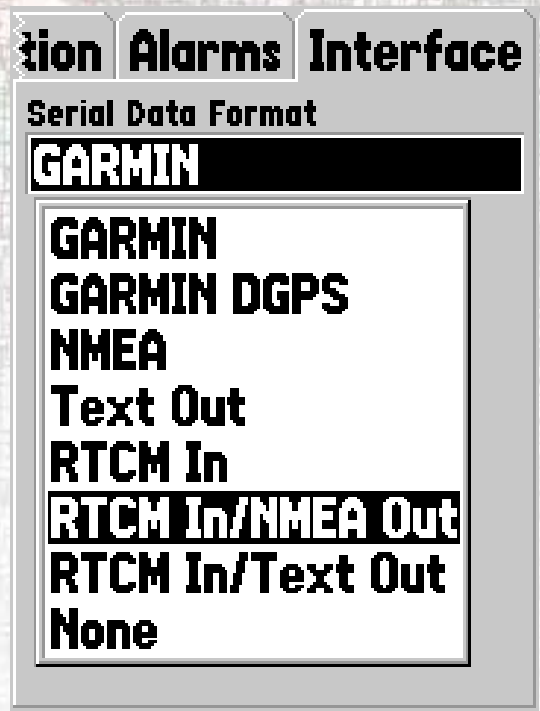

General
Time
Units
L:
Elevation
Feet
Depth
Feet
Distance and Speed
Statute
Temperature
Fahrenheit
Direction Display
Numeric Degrees
Speed Filter
Auto

Location Setup

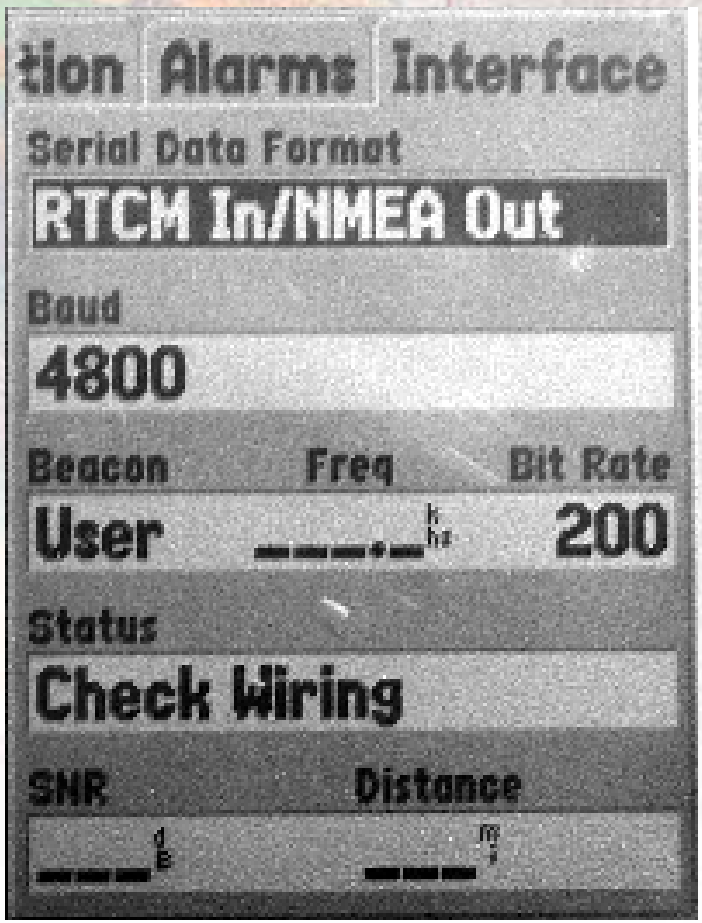




Interface Setup



RTCM NMEA screen



NDGPS Setup

ANNAPOLIS, MD
Status: Operational
RBn Antenna Location: 39° 0.67' N;76° 36.35' W
REFSTA Ant Location (A): 39° 0.61674' N;76° 36.55469' W
REFSTA Ant Location (B): 39° 0.63062' N;76° 36.5451' W
REFSTA RTCM SC-104 ID (A): 58
REFSTA RTCM SC-104 ID (B): 59
REFSTA FIRMWARE VERSION: RD00-1C19
Broadcast Site ID: 847
Transmission Frequency: 301 KHZ
Transmission Rate: 200 BPS
Signal Strength: 100 uv/m at 290 km

http://www.navcen.uscg.gov/ADO/DgpsSelectStatus.asp

USDA

Setting up WAAS DGPS

Topics Covered in this section

- Changing the settings of the Map76
- Setup for NDGPS use
- Setup for WAAS use

USDA

Using MapSource with Garmin GPS Map76

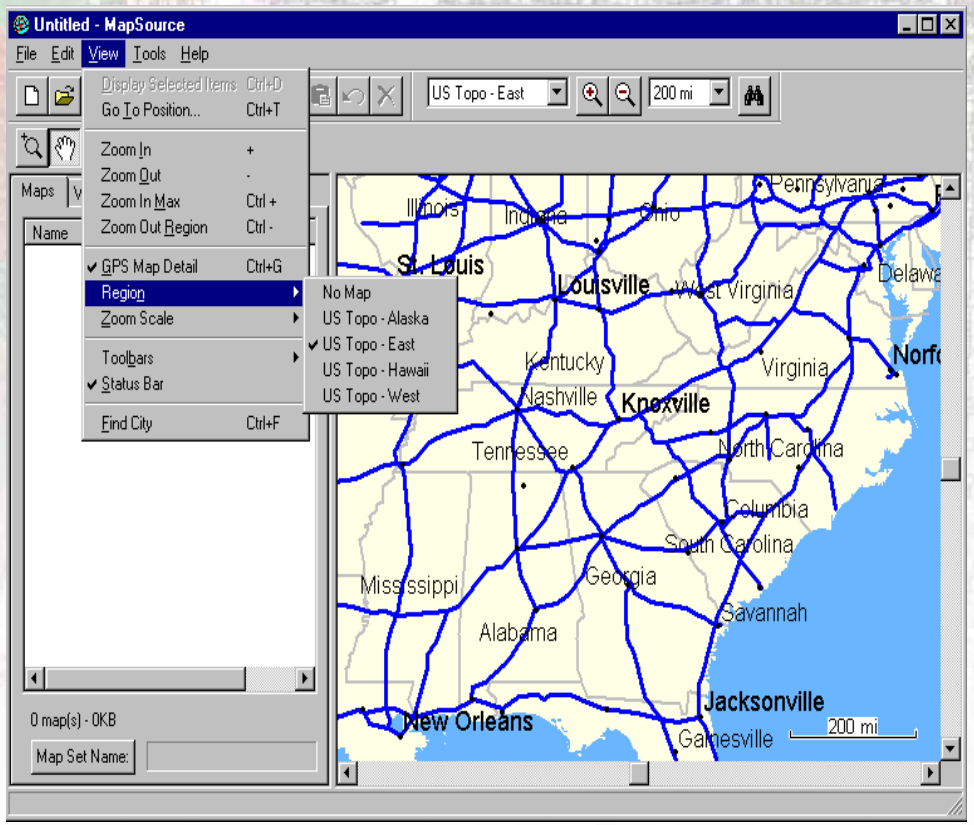
- Set GPS Interface to Garmin and connect the GPS unit to the PC port with the cable.

- MapSource has a wide variety of capabilities, for our purposes it will be used primarily to provide a background map while using the GPS Map76

USDA

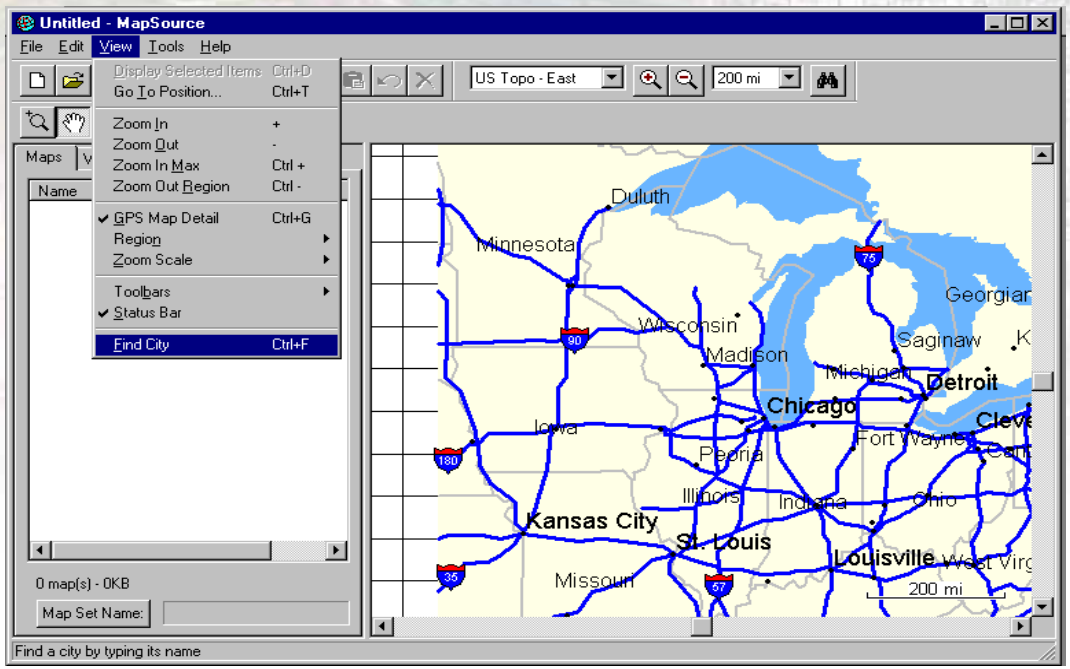
Selecting an Area in MapSource

- In the menu drop-down list select View>Region
- Choose the region where waypoints will be collected



Choosing the Site Specific Location

- After choosing the Region for GPS waypoint collection, choose the site specific city
- To choose a city go to View>Find City and the Find City dialog box will open



Zooming in and out Using MapSource

Click the Zoom In or Zoom out buttons to change the view scale but maintain the same center.

Zoom Tool 

Use the interactive zoom tool to draw a box on the map view to zoom to.

Selecting a Map to Upload to the GPS Unit

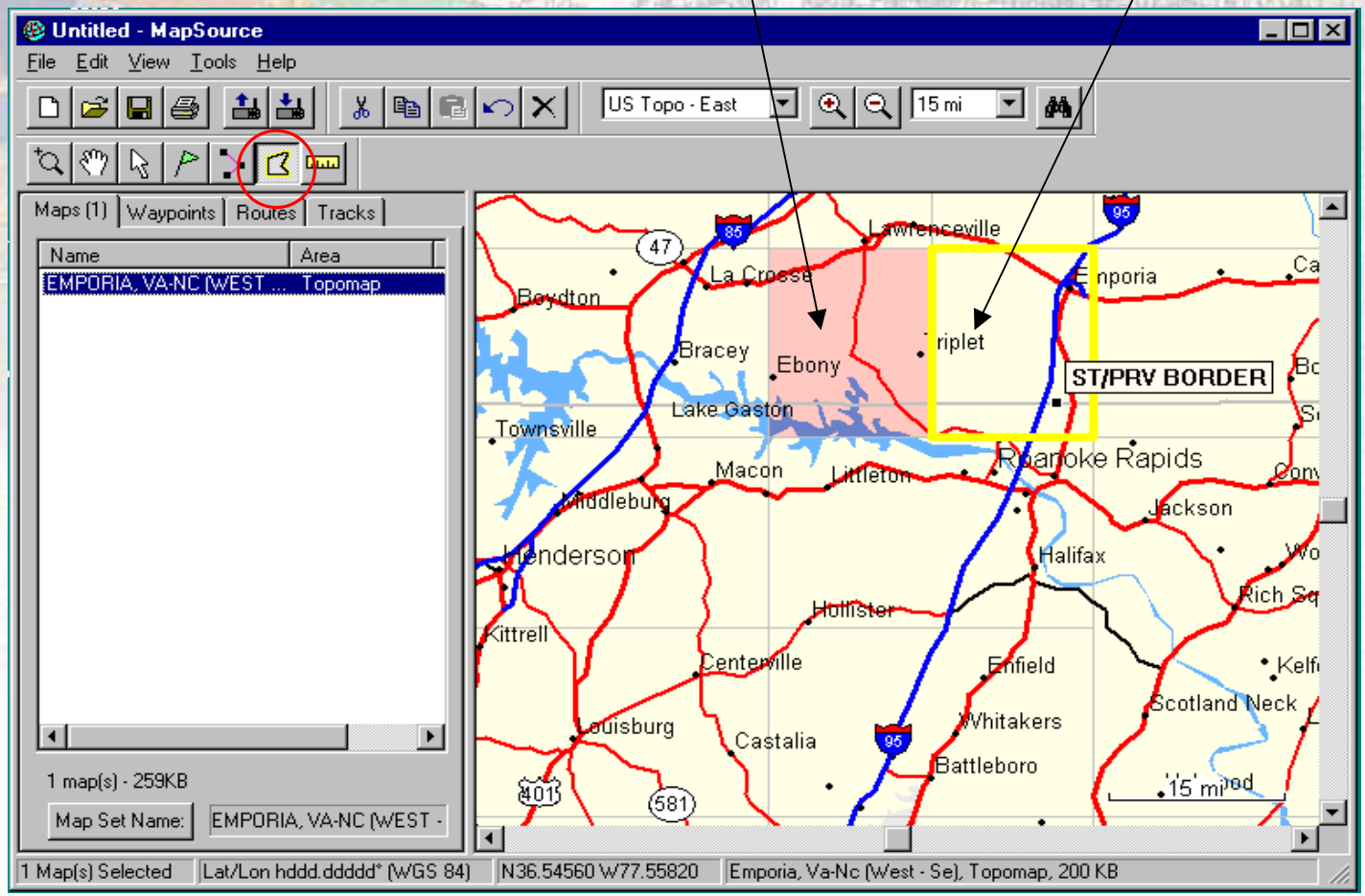
Use the Map tool on the tool bar to select the map area or maps areas that you want to load into the GPS

Selecting Map Areas to Add to the GPS Using the Map Tool

The map area selected to be added to the GPS

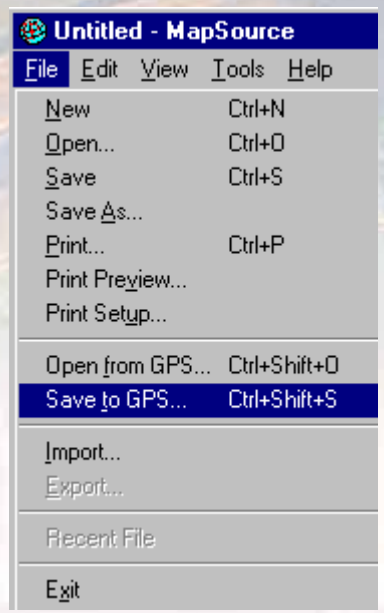
More than one map area can be selected to add to the GPS

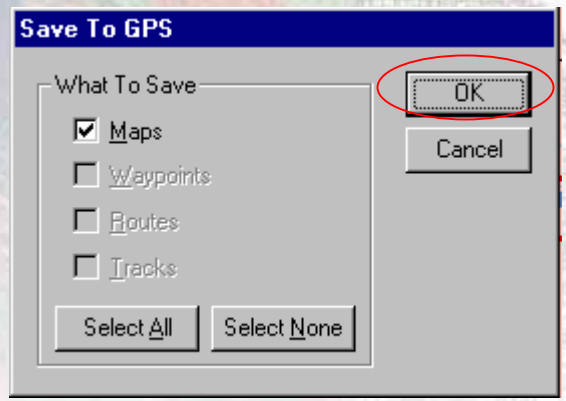
The Map area or Maps areas that are selected to load up to the GPS unit



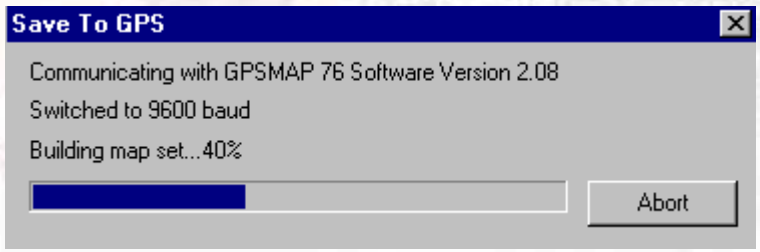
Saving a Map area or Map areas to the GPS Unit

In the File Drop-down Menu select **Save to GPS**



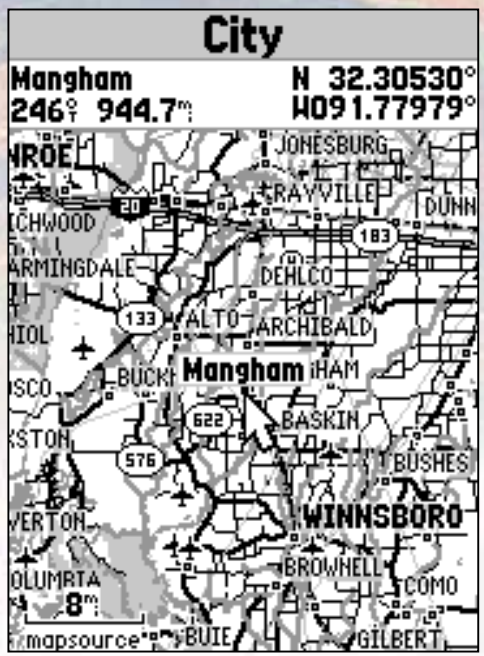


Select **OK** to start the upload process of the map to the GPS Unit



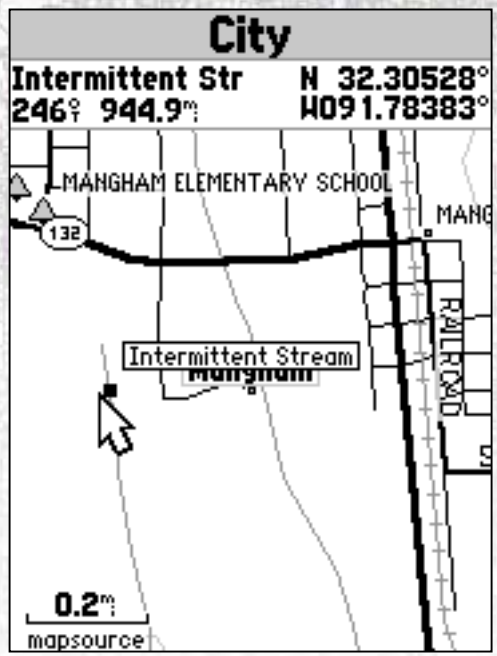
The status dialog box will indicate the download progress of the Map to the GPS

Detailed Data on the Maps is Available for GPS

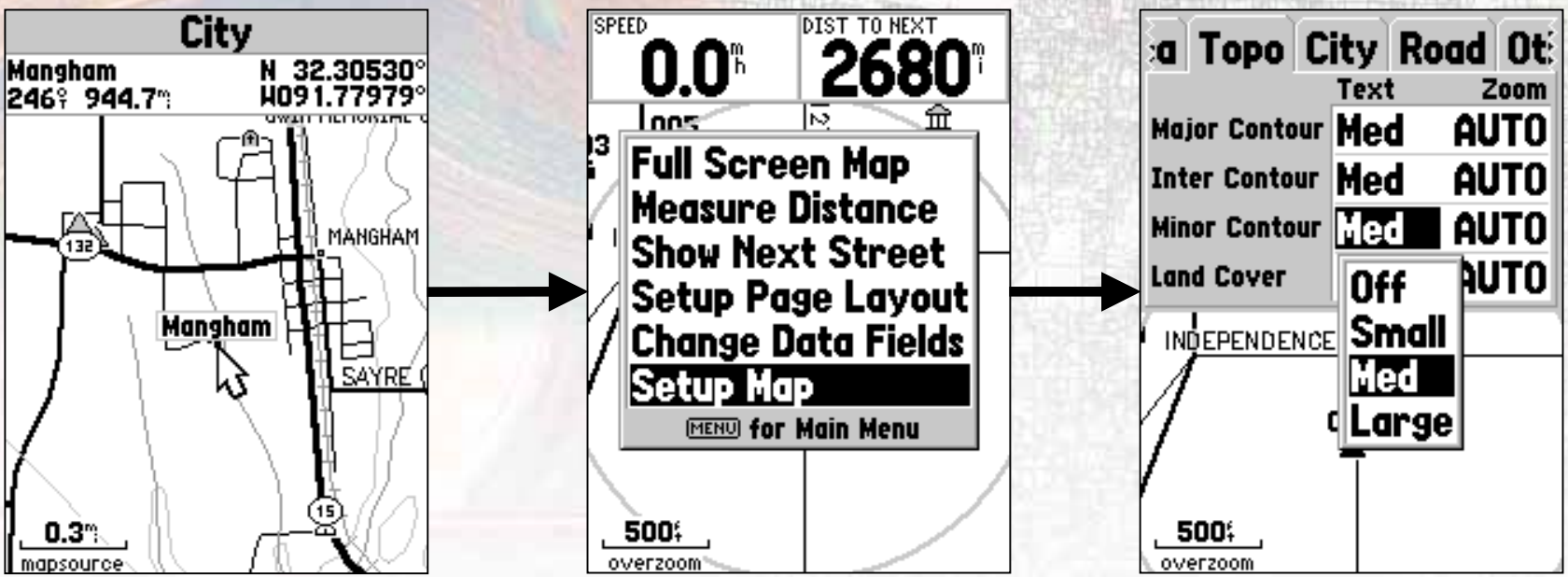


Detailed Data is included on the Mapsource maps and can be used with the GPS

Details Include:
Roads
Airports
Streams
Places
Railroads



Adjusting Map Display on the Map76



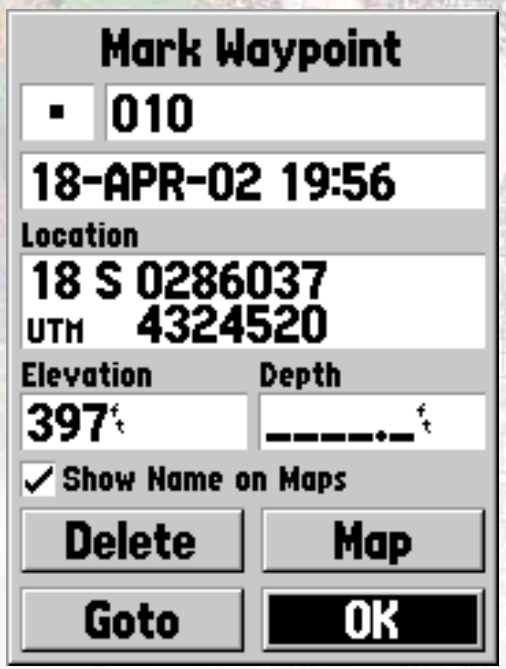
Topics Covered in this section

- Selecting base maps in MapSource software
- Uploading base maps to the Map76
- Adjusting map display on the Map76

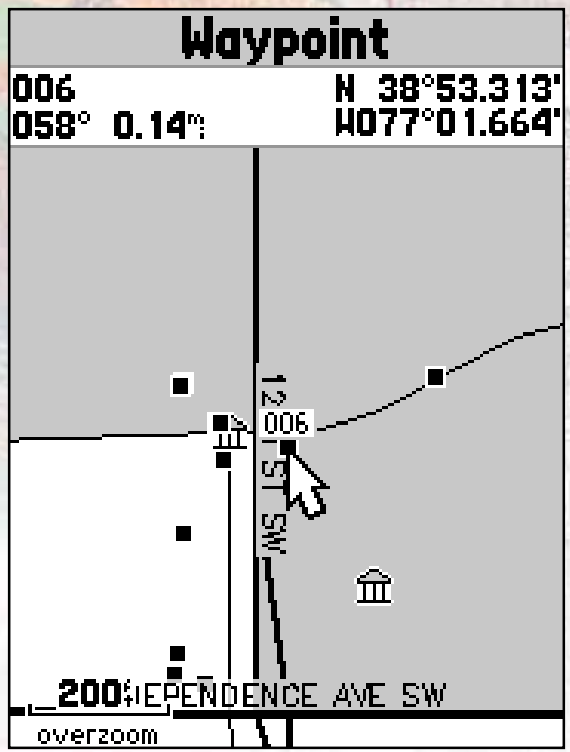
USDA

Using the Map76 to Collect Data

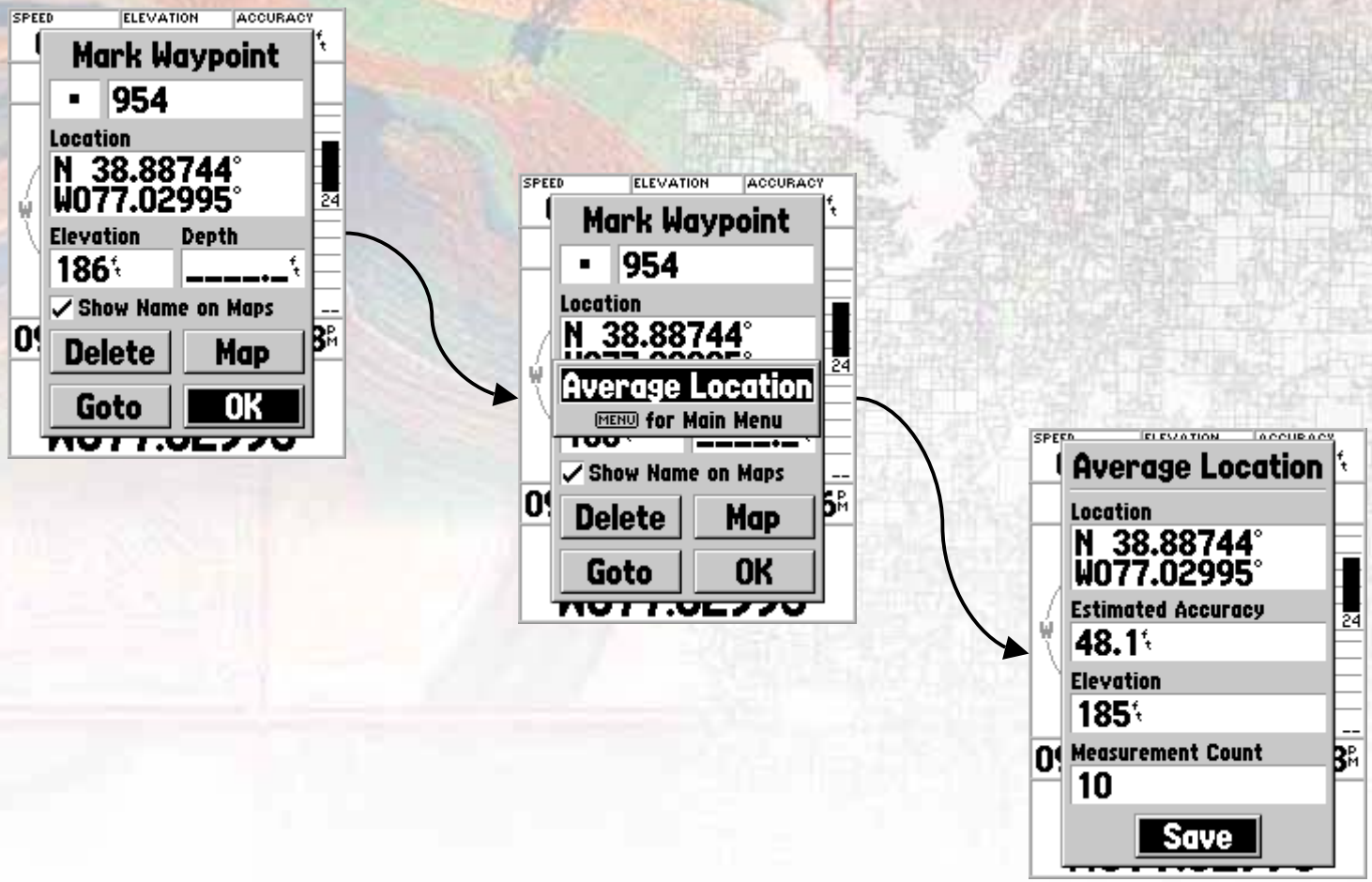
Marking A Waypoint



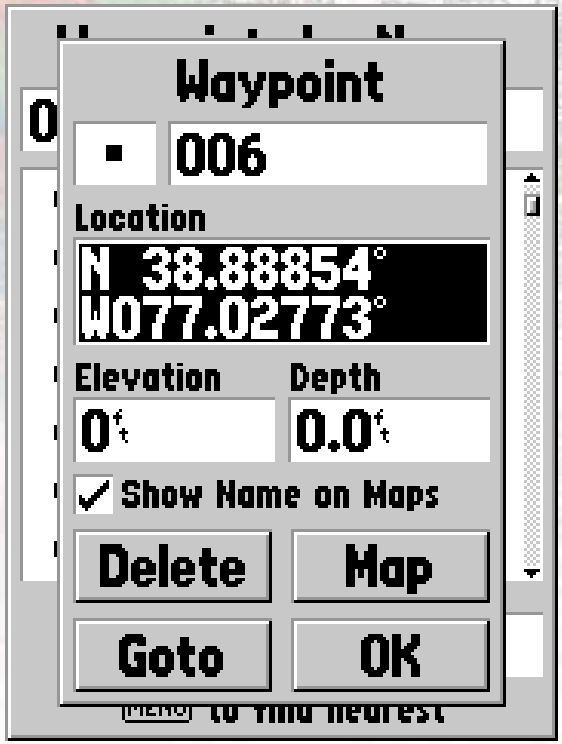
Display a Waypoint on the map



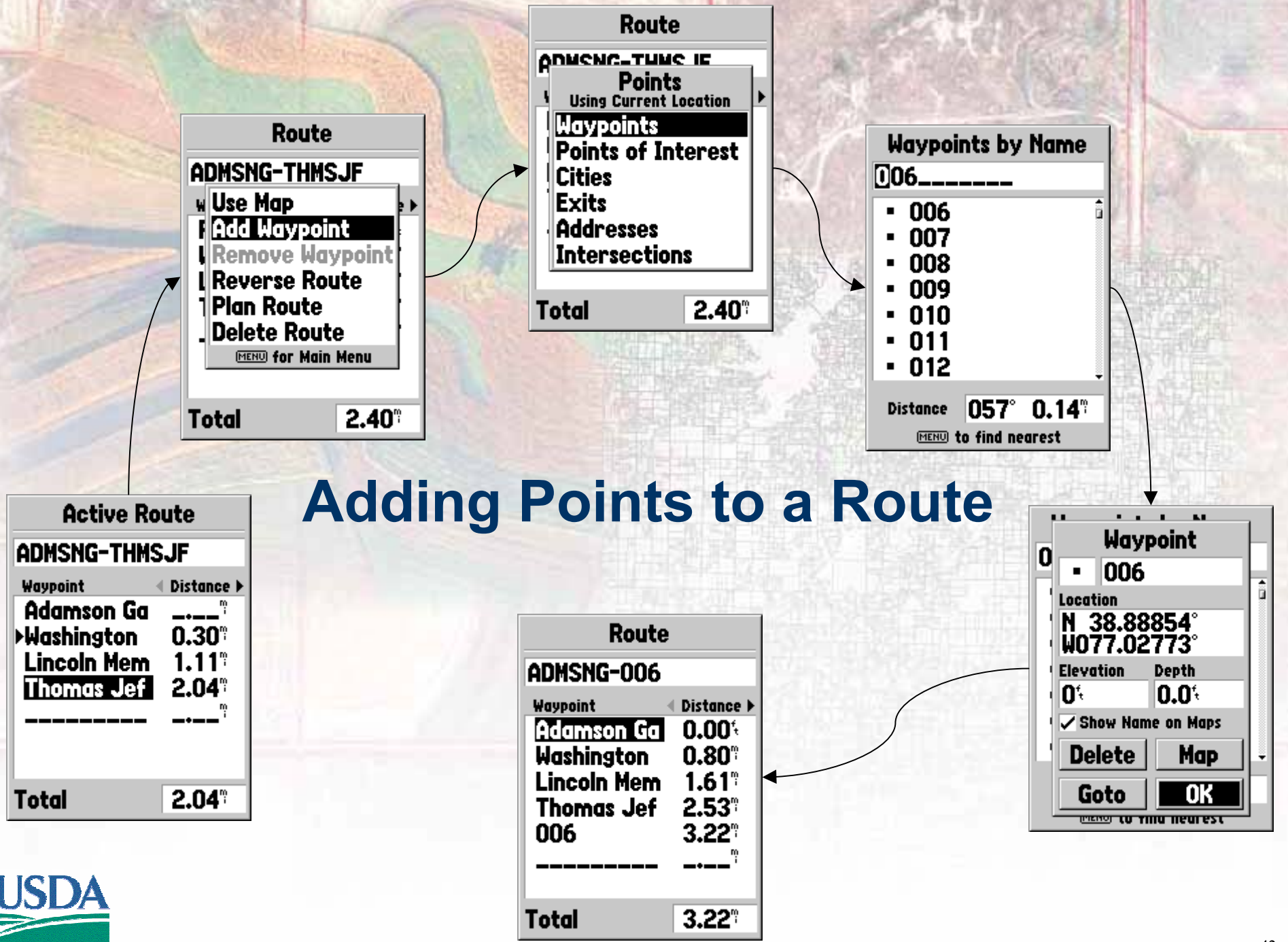
Using the Averaging Function



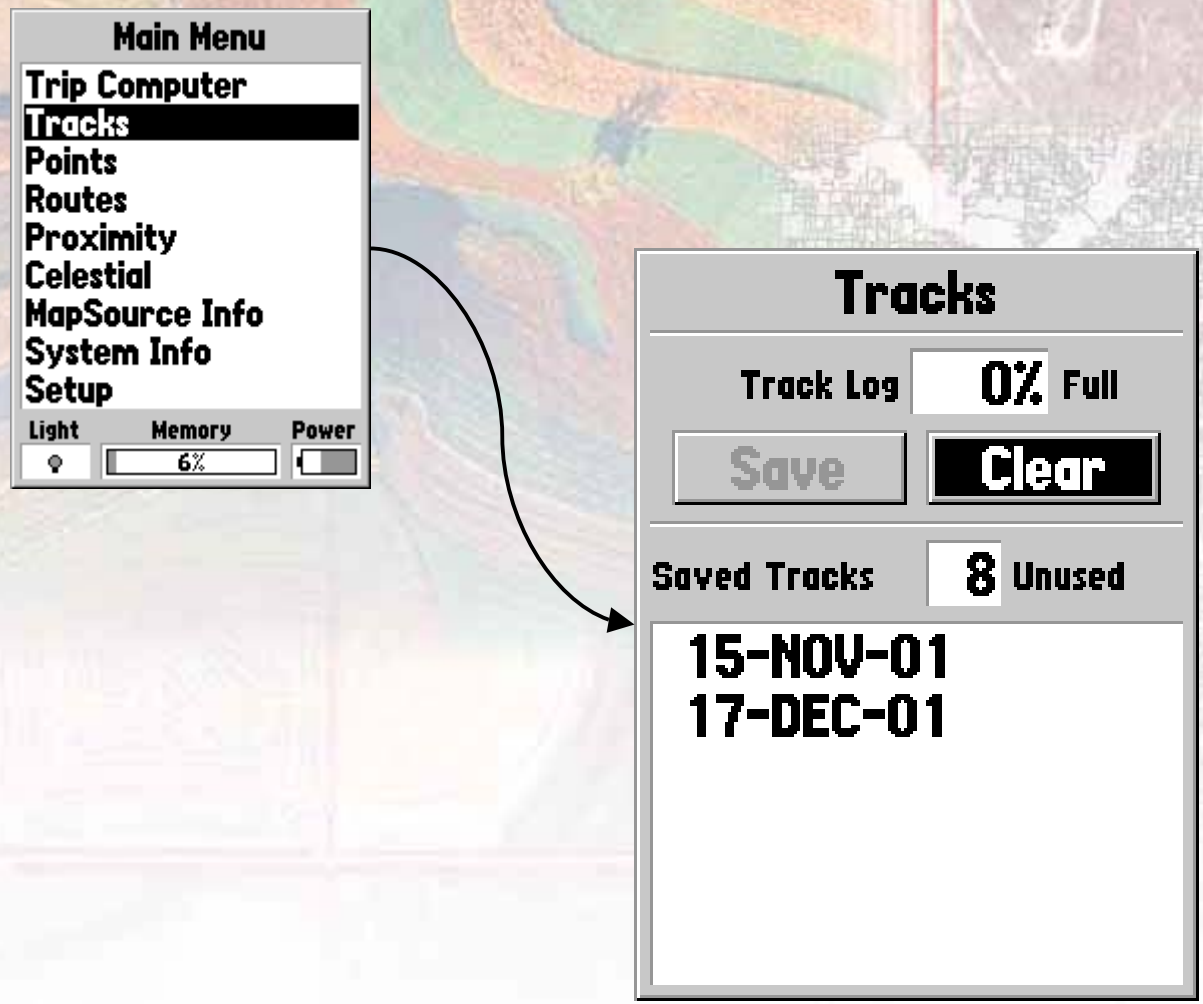
Entering a Waypoint with user coordinates



Adding Points to a Route

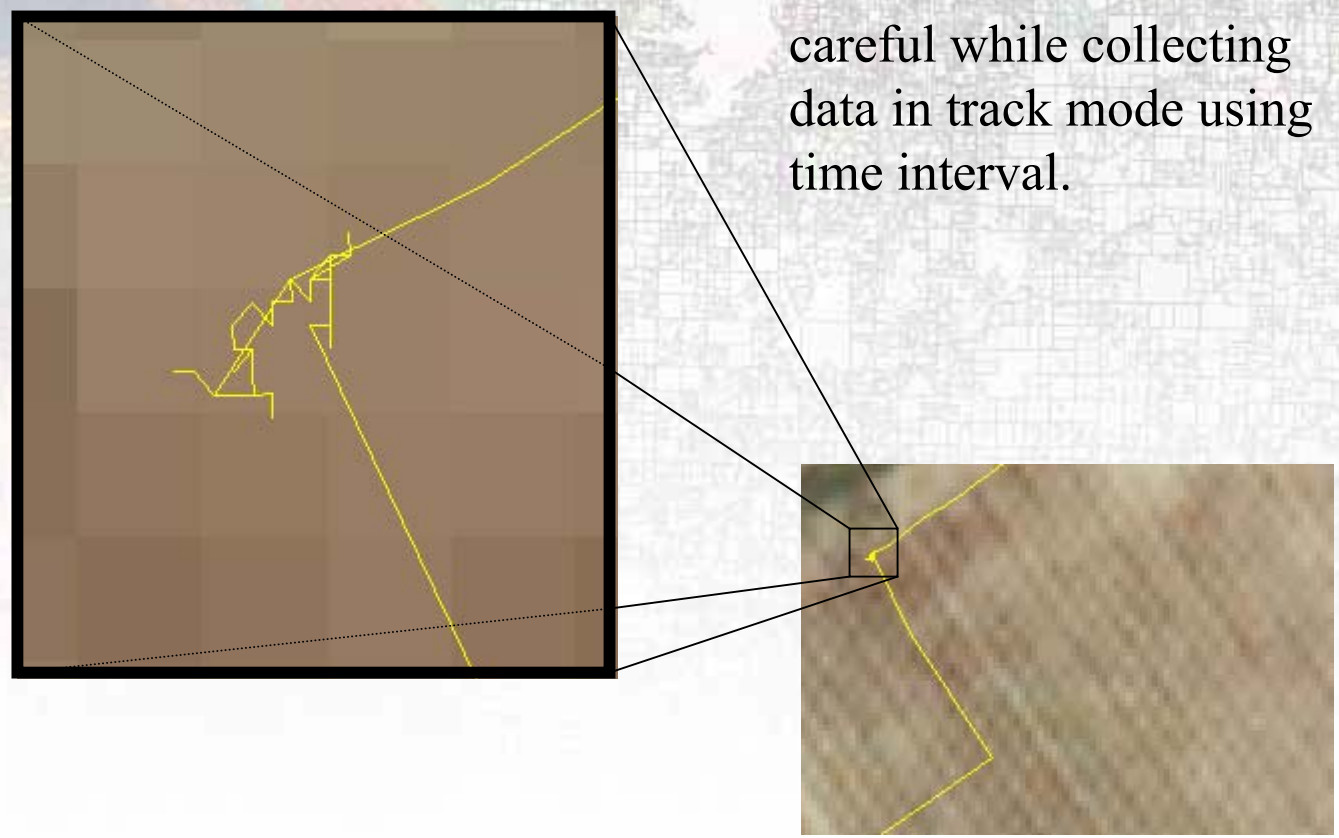


Tracks


Main Menu
Trip Computer
Tracks
Points
Routes
Proximity
Celestial
MapSource Info
System Info
Setup
Light
Memory
6%
Power
Tracks
Track Log
0%
Full
Save
Clear
Saved Tracks
8
Unused
15-NOV-01
17-DEC-01

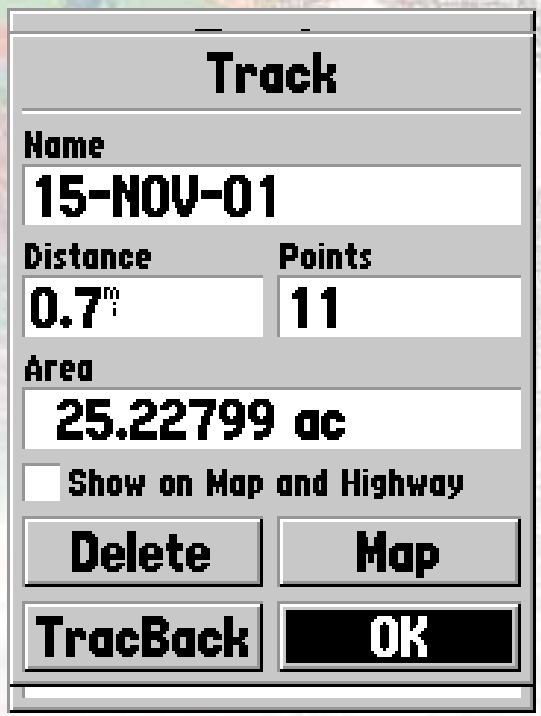
Set up track menu

Record Method: Time



Data collector must be careful while collecting data in track mode using time interval.

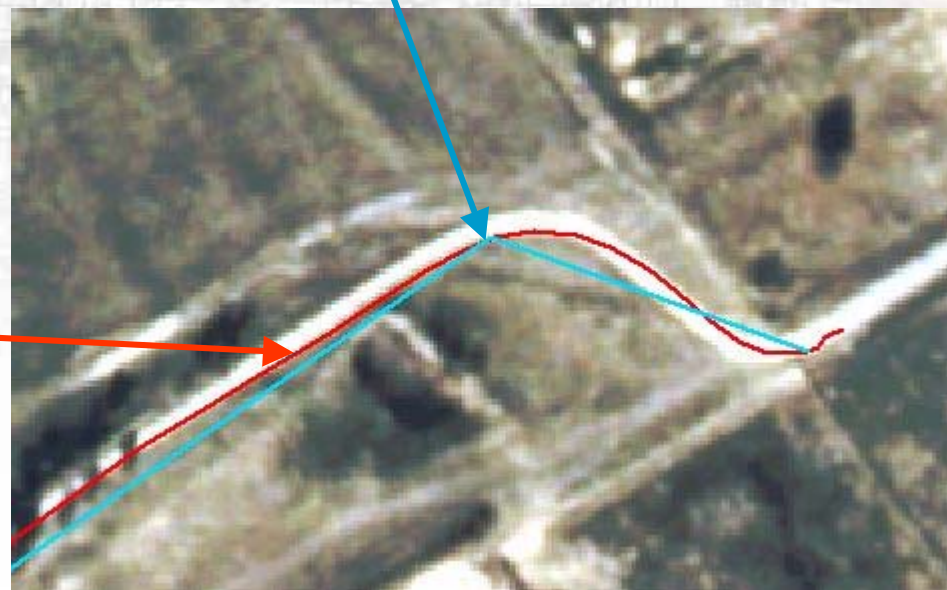
Save a Track


Track
Name
15-NOV-01
Distance
0.7
Points
11
Area
25.22799 ac
Show on Map and Highway
Delete
Map
TracBack
OK

Comparison of Active Track Log and Saved Tracks

Features created from a Saved Track

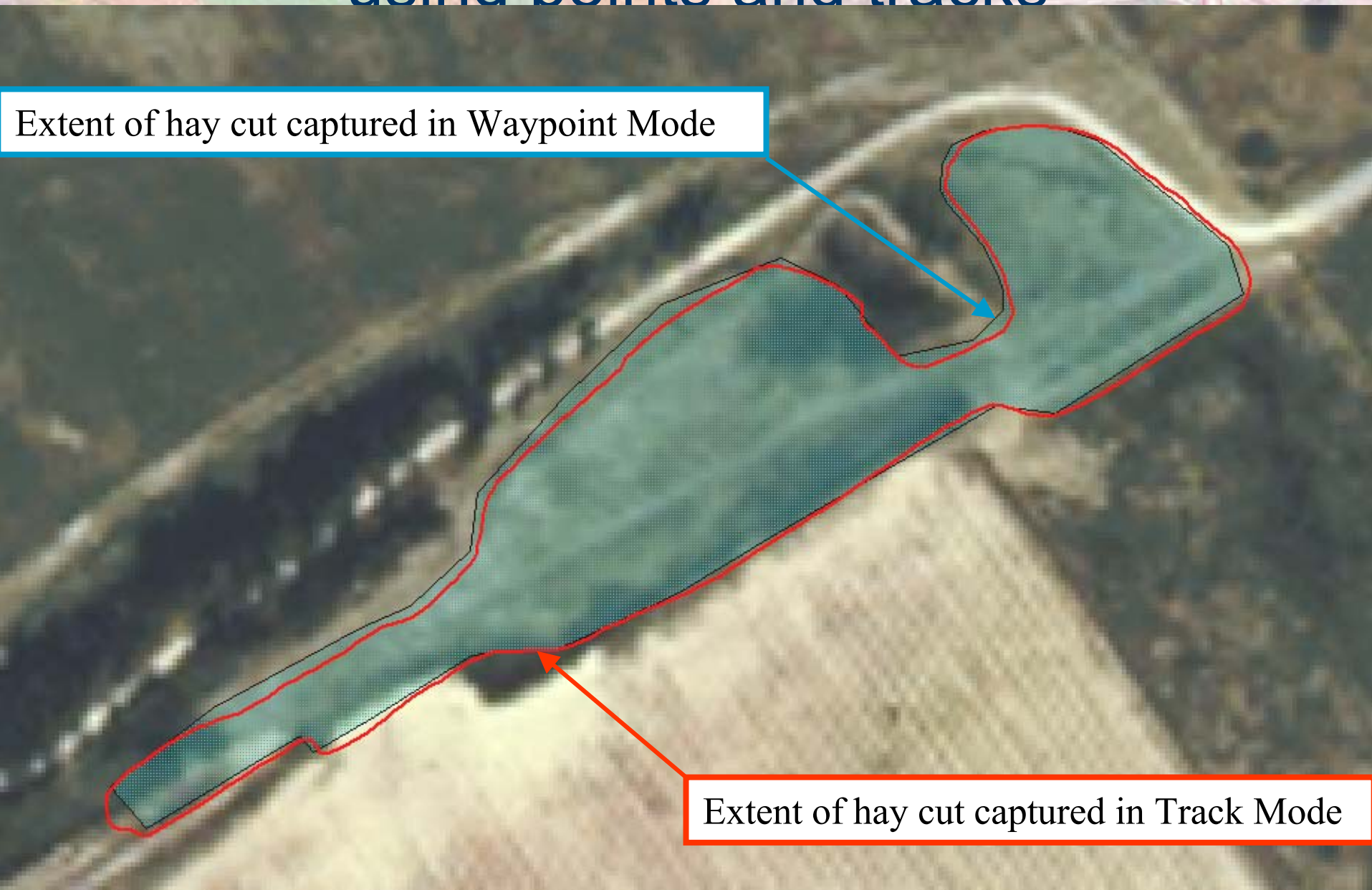
Feature created from an Active Track using distance interval.



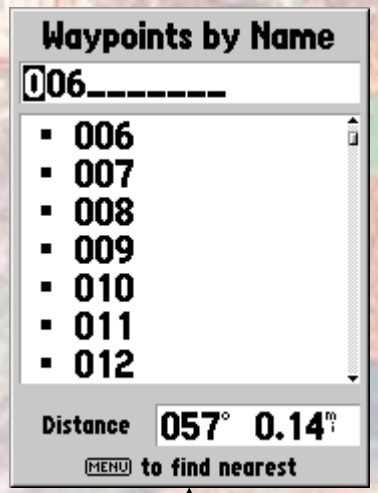
Feature created from an Active Track using time interval.

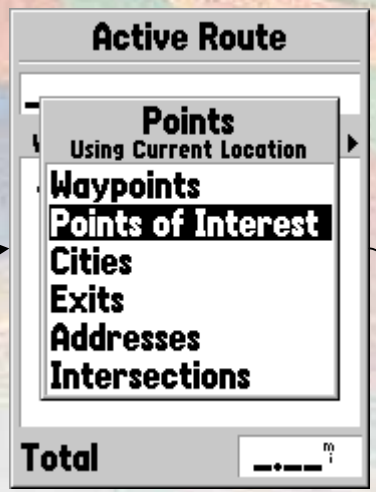
USDA

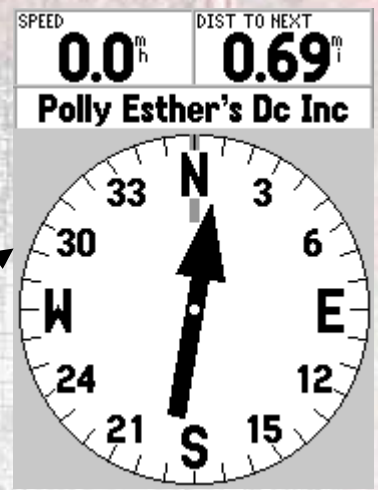
Comparison of Area data captured using points and tracks

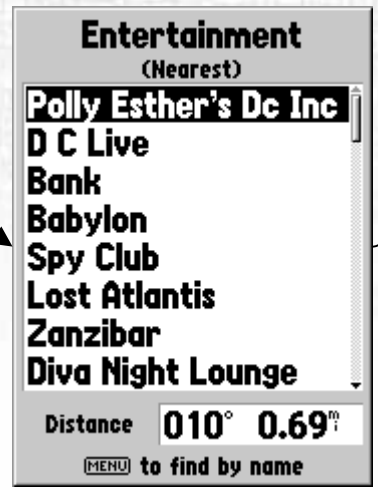


Navigation to a Point

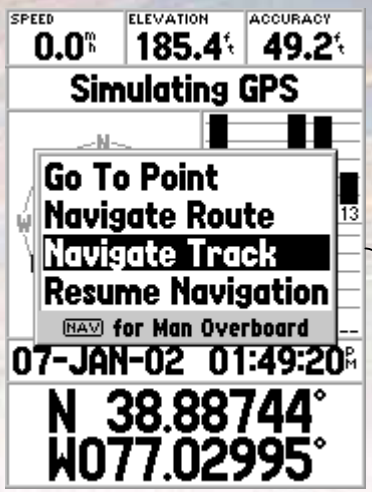


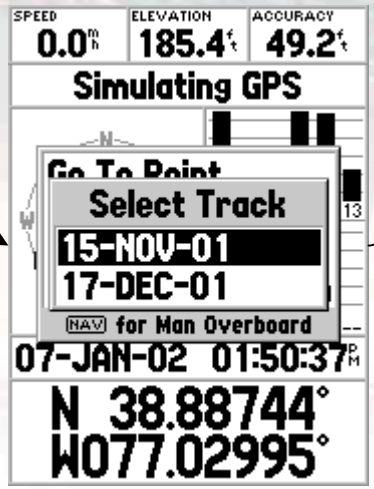


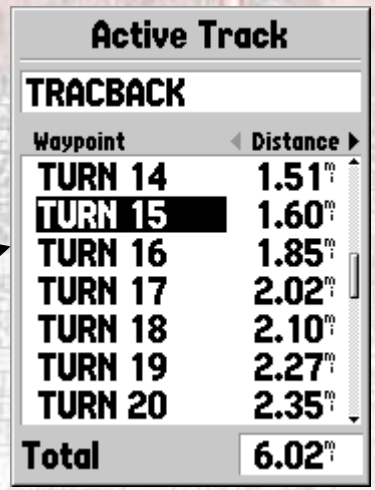


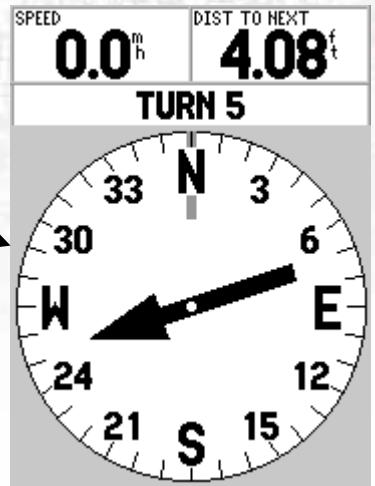


Navigation along a route or track









Topics Covered in this section

- Marking a waypoint
- Setting up the track log
- Saving tracks
- Relative merits of waypoint and track data collection
- Navigation to a point
- Navigation along a route or track

USDA